NEW AND UNUSUAL PLANTS FROM UTAH

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The flora of Utah has been under investigation for the past century. It is not surprising, however, that new or unusual entities are found from time to time, even after the state has been botanized by many interested persons. The state is huge, has a rugged topography, and a varied climate. And, there has never been a sufficient number of botanists with time enough to devote to botanical exploration of Utah. In recent years, the number of students of Utah botany has increased, and with each passing year new taxa are being discovered. During the past two decades numerous new entities have been described from the state, and range extensions are so numerous that they are seldom published.

Thus, as exploration continues and as more investigators search the poorly explored sections, more entities will be added to the large list of plant species already known. The present paper adds three taxa to the state flora, one previously known from a collection on the San Rafael Swell, and the other two previously undescribed.

The dogbane family (Apocynaceae) is represented in Utah by the genera *Apocynum* and *Amsonia*. The species in each of those genera are easily distinguished in the field. Thus, I was surprised when, in early May of 1968, I happened upon a clump of plants which were obviously apocynaceous, but which did not belong to either *Apocynum* or *Amsonia*. The clump of plants was about four feet square, and was situated on a bank of a badly eroded intermittent stream channel in Castle Valley on the west side of the La Sal Mountains, Grand Co., Utah. The plants were bright green and in early flower. I searched for other clumps of the plant, but was unsuccessful. In late May of 1968, Dr. Glen Moore and I returned to the site and collected some plants in full flower. The two of us conducted a thorough search of the vicinity but failed to find additional specimens. The clump was visited again in September of 1969 and still survives on its precarious perch.

The plant has been identified as *Cycladenia humilis* Benth. var. *venusta* (Eastw.) Woodson ex Munz. The species is known from California only, and the variety from Monterey and Los Angeles Counties, California, and from the San Rafael Swell, Utah (Abrams, 1951). The basis for the report from the San Rafael Swell is not known by me. Presumably, the plant was collected in the San Rafael Swell by M. E. Jones, possibly in 1914 or 1915. He visited that region on both of those years. However, he was also in Castle Valley during 1915 (Munz, 1965).

Voucher specimens for *Cycladenia humilis* in Utah (Figure 1, Map 4): Grand Co.; Castle Valley, ca. 4.5 miles east of junction

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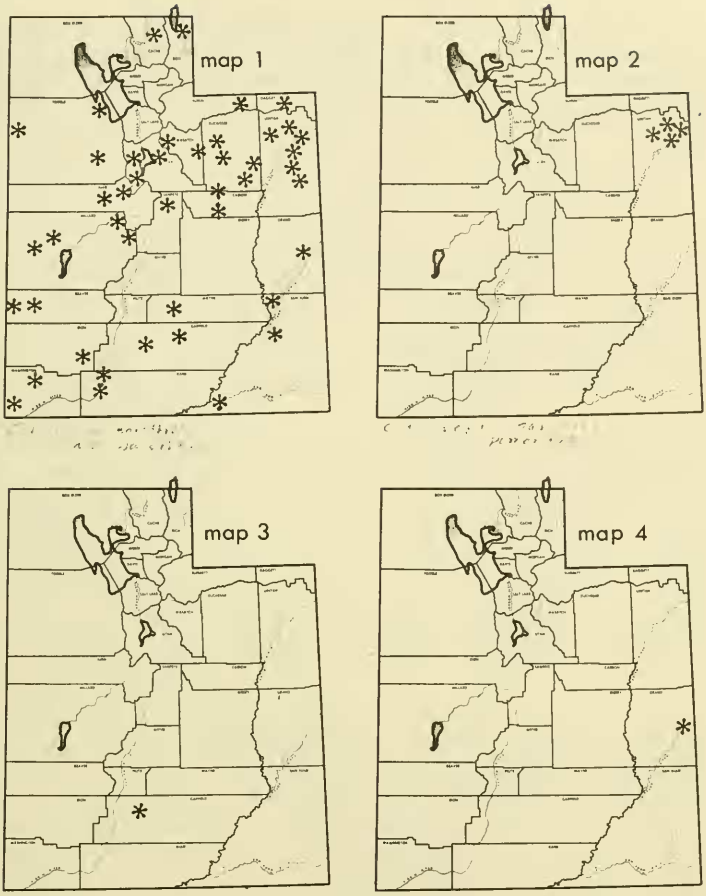

Map 1. Distribution of *Gutierrezia sarothrae* var. *sarothrae* based on specimens in the herbarium of Brigham Young University.
Map 2. Distribution of *Gutierrezia sarothrae* var. *pomariensis*.
Map 3. Distribution of *Eriogonum revealianum*.
Map 4. Distribution of *Cycladenia humilis* var. *venusta*.

with Utah highway 128, S. L. Welsh 7013, 3 May 1968 (BRY); do S. L. Welsh and G. Moore 7168, 29 May 1968 (BRY).

Eriogonum revealianum, n. sp.

A *Eriogonum corymbosi* differt pedunculis longior et caulibus foliaceis basi tantum.

Fruticulus 1.5-3 dm altus, erectus; caules basi per 3-10 cm foliosi; laminae foliorum lanceolatae, 1.5-3 (3.5) cm longae, (0.3) 0.5-1.4 cm latae, albo-tomentosi supra et infra, petiolis 0.7-2 cm longis; cau-

les tomentosi dense, 3-10 dm longi; pedunculi 6-13 cm longi, tomentosi; bracteae minutae ad foliiformes; inflorescentiae cymarum, ramus principalibus 2-4 (5). 1.5-6 cm longis; involucra turbinata, 2.5-4 mm longa. 2-2.5 mm lata. sessilia vel subsessilia; perianthia

Fig. 1. *Cycladenia humilis* Benth. var. *venusta* (Eastw.) Woodson ex Munz. Habit of plant and fruit.

2.7-3.7 mm longa, alba vel subrosea, costis viridibus, albidis, vel roseis; achenia immatura 2-2.5 mm longa, viridula.

Shrubby perennial, 1.5-3 dm tall, with few to many erect to ascending branches from woody caudices; leaves on lower 1/5-1/2 (3-10 cm) of the branches of current season, the blades lance-oblong to oblong, elliptic, or oblanceolate, 1.5-3 (3.5) cm long, (0.3) 0.5-1.4 cm broad, entire, crenulate, or more or less revolute, densely whitish tomentose below, densely to moderately tomentose above, the petioles 0.7-2 cm long; current stems densely cobwebby-tomentose, 3-10 cm long; peduncles 6-13 cm long, densely to moderately tomentose; bracts scale-like or subfoliose; inflorescence cymose, with 2-4 (5) main branches 1.5-6 cm long; involucres sessile or subsessile, turbinate, 2.5-4 mm long, 2-2.5 mm wide, tomentose externally, the teeth 0.9-1.3 mm long; perianth 2.7-3.7 mm long, whitish or pinkish, with green, pink, or red midribs; immature achenes 2-2.5 mm long, greenish (Figure 2, Map 3).

Specimens Examined: Utah; Garfield Co., Gravelly, boulder strewn, east-facing slope, near head of canyon, at milepost 26, south of Antimony, along Utah highway 22, in *Artemisia* community, S. L. & S. L. Welsh 9389, 4 Sept. 1969 (Holotype BRY; Isotypes US, NY, ISC, and others); East fork of Sevier R., Utah 22 (Antimony-Bryce Canyon road), T. 32 S., R. 2 W., Sec 26., elevation 7,300 feet, N. H. Holmgren et al 2253, 24 July 1965 (BRY, NY); Bouldery bitch of a slope, dominated by *Gutierrezia*, ca 11.4 miles south of Antimony, along Utah highway 22, S. L. Welsh et al 6486, 24 July 1967 (BRY, ISC, NY).

Eriogonum revealianum is apparently most closely related to *E. corymbosum* var. *corymbosum* (Reveal 1968, 1969), and has probably been derived from that entity. It is unique among the members of the corymbosum complex in having the very short leafy stem and elongate, naked peduncles. Occasionally, some specimens of *E. corymbosum* var. *corymbosum* approach this condition, but not on a population basis. Apparently, *E. revealianum* is confined to the north end of the broad valley north of Bryce Canyon, along a minor drainage of the east fork of the Sevier River. It occurs in a community dominated by *Gutierrezia sarothrae* (Pursh) Britt. & Rusby var. *sarothrae*, *Artemisia nova* A. Nels., *Eriogonum microthecum* Nutt., and *Artemisia pygmaea* Gray.

The species is named in honor of Dr. James L. Reveal, the principal and most energetic student of *Eriogonum*.

Gutierrezia sarothrae (Pursh) Britt. & Rusby
var. *pomariensis* var. nov.

A var. *sarothrae* differt bracteis involucrorum obtusis et floribus longior et plus numerosi.

Suffrutices, 1.2-4.5 dm alti; caules plures vel numerosi, basi persistens ligneo; folia 15-52 mm longa, 0.5-2.5 mm lata, linearia, integra, glabra vel scabra, glandulifera; capitula corymbosa, solitaria

Fig. 2. *Eriogonum revealianum* n. sp.

vel 2-3; involucra 5-7.5 mm longa, 2-5 mm lata, turbinata vel cylindracea, bracteae obtusae late, maculis viridibus subapicalibus, resinosae; flores ligulate 5-9, corollis 2-5 mm longi; flores discus 5-7, corollis 3.5-4.5 mm longis; achenia strigosi, 1-2 mm longi.

Subshrubs, 1.2-4.5 dm tall, the stems several to many from a

Fig. 3. *Gutierrezia sarothrae* (Pursh) Britt. & Rusby var. *pomariensis* n. var.

persistent. woody base; leaves 15-52 mm long, 0.5-2.5 mm broad, linear, entire, glabrous or scabrous. glandular-dotted; heads in corymbose inflorescences, solitary or 2-3 clustered at stem ends; involucres 5-7.5 mm long. 2-5 mm broad, turbinate to cylindric, the bracts broadly obtuse. with a greenish. subapical spot, resin coated;

ligulate flowers 5-9, the corollas 2-5 mm long; disk flowers 5-7, the corollas 3.5-4.5 mm long; achenes hairy, 1-2 mm long (Figure 3, Map 2).

Specimens Examined: Utah; Uintah Co., Sandy flat, base of sandstone cliffs, Frontier formation, mouth of Orchard Creek Draw, Dinosaur National Monument, S. L. Welsh et al 9471, 2 Oct. 1969 (Holotype BRY; Isotypes NY, US); Mouth of Redwash, south boundary, Dinosaur National Monument, S. L. Welsh 403, 3 July 1955 (BRY); With shadscale, on red, silty Uinta formation ca 4 miles west of Maeser, along Utah highway 245, S. L. Welsh and G. Moore 6754, 3 Sept. 1967 (BRY); Moenkopi shale, Split Mt. Gorge campground, Dinosaur National Monument, J. Brotherson 800, 15 July 1965 (BRY), do 803, 25 Aug. 1965 (BRY); Mowry shale, .25 miles west of Quarry, Dinosaur National Monument, J. Brotherson 831, 25 Aug. 1965 (BRY).

In 1955, while making a collection of plants in Dinosaur National Monument, I came across a specimen of *Gutierrezia sarothrae* with exceptionally large heads (Welsh, 1957). The specimen was sent to the late S. F. Blake in Beltsville, Maryland for verification. Dr. Blake commented (personal communication) that the specimen was unusual and apparently was closely related to some Californian members of *Gutierrezia*. The specimen was retained by Dr. Blake, and its present whereabouts is unknown. During the past few years, several specimens of this unusual type have been collected in Uintah County. These have made it possible to analyze the distinguishing features and to provide an adequate description of the entity.

Plants with large heads were also noted by Solbrig (1960, p. 56) in his treatment of *Gutierrezia*. He stated that a few specimens from the Uinta Mountains of northeastern Utah have large heads, similar to those of *G. bracteata* (from California).

In essence, *G. sarothrae* var. *pomariensis*, named for its type locality in Orchard Creek Draw, is distinguished from var. *sarothrae* by its larger heads, broader, obtuse bracts, and more numerous and larger flowers. In addition, the heads tend to be solitary at the ends of the branches of the inflorescence instead of clustered as they are in var. *sarothrae*.

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